WHAT IS CLAIMED IS:

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1. A liquid phase growth method comprising the steps of:

immersing a substrate in a crucible that stores a solvent having a growth material dissolved therein; and cooling the solvent from an interior thereof.

- 2. The liquid phase growth method according to Claim 1, wherein the solvent is cooled from a central part thereof.
 - 3. The liquid phase growth method according to Claim 1, wherein the cooling step is carried out by letting a medium flow through a tube immersed in the crucible.
 - 4. The liquid phase growth method according to Claim 1, wherein the cooling step is carried out by letting a medium flow through a hole formed in a jig for holding the substrate.
 - 5. The liquid phase growth method according to Claim 1, wherein the cooling step is carried out by letting a medium flow through a hole formed in the crucible.
 - 6. The liquid phase growth method according to

Claim 3, wherein the medium is a gas.

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- 7. The liquid phase growth method according to Claim 1, wherein a liquid phase growth bath for formation of a p⁻ type Si layer is used as the crucible and, subsequent thereto, a liquid phase growth bath for formation of an n⁺ type Si layer is used as the crucible.
- 8. The liquid phase growth method according to Claim 1, wherein the growth material is Si, Ge, or GaAs.
- 9. The liquid phase growth method according to
 15 Claim 1, wherein the solvent is a melt of In or Sn.
 - 10. A liquid phase growth apparatus comprising:
 a crucible for storing a solvent having a growth
 material dissolved therein;
- a wafer cassette for holding a substrate to be immersed in the solvent; and
 - a cooling section for cooling the solvent from an interior thereof.
- 25 11. The liquid phase growth apparatus according to Claim 10, wherein the cooling section is a tube which is immersed in the crucible and through which a

medium is made to flow.

- 12. The liquid phase growth apparatus according to Claim 10, wherein the cooling section is a hole which is formed inside the wafer cassette and through which a medium is made to flow.
- 13. The liquid phase growth apparatus according to Claim 10, wherein the cooling section is a hole which is formed in the crucible and through which a medium is made to flow.
 - 14. The liquid phase growth apparatus according to Claim 11, wherein the medium is a gas.

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- 15. The liquid phase growth apparatus according to Claim 14, wherein the gas is hydrogen or nitrogen gas as an atmospheric gas.
- 20 16. The liquid phase growth apparatus according to Claim 10, wherein the crucible comprises a liquid phase growth bath for formation of a p⁻ type Si layer and a liquid phase growth bath for formation of an n⁺ type Si layer.

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17. The liquid phase growth apparatus according to Claim 10, wherein the wafer cassette is rotatable

about its own axis.

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- 18. The liquid phase growth apparatus according to Claim 10, wherein the wafer cassette is revolvable about an axis different from its own axis.
- 19. The liquid phase growth apparatus according to Claim 10, wherein the growth material is Si, Ge, or GaAs.

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20. The liquid phase growth apparatus according to Claim 10, wherein the solvent is a melt of In or Sn.